0500

#2

#2

|||||||||||||||||||||||||||||||||||||||||

ENTERED   OIPE

#2

RAW SEQUENCE LISTING   DATE: 03/11/2002 P.5
PATENT APPLICATION: US/10/081,816   TIME: 10:41:10

Input Set : **A:\EP.txt**
Output Set: **N:\CRF3\03112002\J081816.raw**

```
   3 <110> APPLICANT: Axel, Richard
   4        Scott, Kristin
   6 <120> TITLE OF INVENTION: Chemosensory Gene Family Encoding Gustatory And Olfactory
Receptors And
   7        Uses Thereof
   9 <130> FILE REFERENCE: 0575/64019-A/JPW/ADM
C--> 11 <140> CURRENT APPLICATION NUMBER: US/10/081,816
C--> 11 <141> CURRENT FILING DATE: 2002-02-22
  11 <150> PRIOR APPLICATION NUMBER: 60/271,319
  12 <151> PRIOR FILING DATE: 2001-02-23
  14 <160> NUMBER OF SEQ ID NOS: 116
  16 <170> SOFTWARE: PatentIn version 3.1
  18 <210> SEQ ID NO: 1
  19 <211> LENGTH: 410
  20 <212> TYPE: PRT
  21 <213> ORGANISM: Drosophila melanogaster
  23 <400> SEQUENCE: 1
  25 Met Asp Thr Leu Arg Ala Leu Glu Pro Leu His Arg Ala Cys Gln Val
  26 1               5                   10                  15
  29 Cys Asn Leu Trp Pro Trp Arg Leu Ala Pro Pro Pro Asp Ser Glu Gly
  30              20                  25                  30
  33 Ile Leu Leu Arg Arg Ser Arg Trp Leu Glu Leu Tyr Gly Trp Thr Val
  34          35                  40                  45
  37 Leu Ile Ala Ala Thr Ser Phe Thr Val Tyr Gly Leu Phe Gln Glu Ser
  38      50                  55                  60
  41 Ser Val Glu Glu Lys Gln Asp Ser Glu Ser Thr Ile Ser Ser Ile Gly
  42 65                  70                  75                  80
  45 His Thr Val Asp Phe Ile Gln Leu Val Gly Met Arg Val Ala His Leu
  46              85                  90                  95
  49 Ala Ala Leu Leu Glu Ala Leu Trp Gln Arg Gln Ala Gln Arg Gly Phe
  50              100                 105                 110
  53 Phe Ala Glu Leu Gly Glu Ile Asp Arg Leu Leu Ser Lys Ala Leu Arg
  54              115                 120                 125
  57 Val Asp Val Glu Ala Met Arg Ile Asn Met Arg Arg Gln Thr Ser Arg
  58      130                 135                 140
  61 Arg Ala Val Trp Ile Leu Trp Gly Tyr Ala Val Ser Gln Leu Leu Ile
  62 145                 150                 155                 160
  65 Leu Gly Ala Lys Leu Leu Ser Arg Gly Asp Arg Phe Pro Ile Tyr Trp
  66              165                 170                 175
  69 Ile Ser Tyr Leu Leu Pro Leu Leu Val Cys Gly Leu Arg Tyr Phe Gln
  70              180                 185                 190
  73 Ile Phe Asn Ala Thr Gln Leu Val Arg Gln Arg Leu Asp Val Leu Leu
  74              195                 200                 205
  77 Val Ala Leu Gln Gln Leu Gln Leu His Gln Lys Gly Pro Ala Val Asp
```

RAW SEQUENCE LISTING   DATE: 03/11/2002
PATENT APPLICATION: US/10/081,816   TIME: 10:41:10

Input Set : A:\EP.txt
Output Set: N:\CRF3\03112002\J081816.raw

```
78     210                215                220
81 Thr Val Leu Glu Glu Gln Glu Asp Leu Glu Glu Ala Ala Met Asp Arg
82 225              230                235              240
85 Leu Ile Ala Val Arg Leu Val Tyr Gln Arg Val Trp Ala Leu Val Ala
86              245                250                255
89 Leu Leu Asn Arg Cys Tyr Gly Leu Ser Met Leu Met Gln Val Gly Asn
90              260                265                270
93 Asp Phe Leu Ala Ile Thr Ser Asn Cys Tyr Trp Met Phe Leu Asn Phe
94              275                280                285
97 Arg Gln Ser Ala Ala Ser Pro Phe Asp Ile Leu Gln Ile Val Ala Ser
98     290                295                300
101 Gly Val Trp Ser Ala Pro His Leu Gly Asn Val Leu Val Leu Ser Leu
102 305                310                315                320
105 Leu Cys Asp Arg Thr Ala Gln Cys Ala Ser Arg Leu Ala Leu Cys Leu
106              325                330                335
109 His Gln Val Ser Val Asp Leu Arg Asn Glu Ser His Asn Ala Leu Ile
110              340                345                350
113 Thr Gln Phe Ser Leu Gln Leu Leu His Gln Arg Leu His Phe Ser Ala
114     355                360                365
117 Ala Gly Phe Phe Asn Val Asp Cys Thr Leu Leu Tyr Thr Ile Val Gly
118     370                375                380
121 Ala Thr Thr Thr Tyr Leu Ile Ile Leu Ile Gln Phe His Met Ser Glu
122 385                390                395                400
125 Ser Thr Ile Gly Ser Asp Ser Asn Gly Gln
126              405                410
129 <210> SEQ ID NO: 2
130 <211> LENGTH: 385
131 <212> TYPE: PRT
132 <213> ORGANISM: Drosophila melanogaster
134 <400> SEQUENCE: 2
136 Met Ser Gly His Leu Gly Arg Val Leu Gln Phe His Leu Arg Leu Tyr
137 1              5                10                15
140 Gln Val Leu Gly Phe His Gly Leu Pro Leu Pro Gly Asp Gly Asn Pro
141              20                25                30
144 Ala Arg Thr Arg Arg Arg Leu Met Ala Trp Ser Leu Phe Leu Leu Ile
145     35                40                45
148 Ser Leu Ser Ala Leu Val Leu Ala Cys Leu Phe Ser Gly Glu Glu Phe
149     50                55                60
152 Leu Tyr Arg Gly Asp Met Phe Gly Cys Ala Asn Asp Ala Leu Lys Tyr
153 65              70                75                80
156 Val Phe Ala Glu Leu Gly Val Leu Ala Ile Tyr Leu Glu Thr Leu Ser
157              85                90                95
160 Ser Gln Arg His Leu Ala Asn Phe Trp Trp Leu His Phe Lys Leu Gly
161              100                105                110
164 Gly Gln Lys Thr Gly Leu Val Ser Leu Arg Ser Glu Phe Gln Gln Phe
165     115                120                125
168 Cys Arg Tyr Leu Ile Phe Leu Tyr Ala Met Met Ala Ala Glu Val Ala
169     130                135                140
172 Ile His Leu Gly Leu Trp Gln Phe Gln Ala Leu Thr Gln His Met Leu
```

RAW SEQUENCE LISTING   DATE: 03/11/2002
PATENT APPLICATION: US/10/081,816   TIME: 10:41:10

Input Set : A:\EP.txt
Output Set: N:\CRF3\03112002\J081816.raw

```
173 145                    150                 155                    160
176 Leu Phe Trp Ser Thr Tyr Glu Pro Leu Val Trp Leu Thr Tyr Leu Arg
177                165                 170                 175
180 Asn Leu Gln Phe Val Leu His Leu Glu Leu Leu Arg Glu Gln Leu Thr
181                180                 185                 190
184 Gly Leu Glu Arg Glu Met Gly Leu Leu Ala Glu Tyr Ser Arg Phe Ala
185            195                 200                 205
188 Ser Glu Thr Gly Arg Ser Phe Pro Gly Phe Glu Ser Phe Leu Arg Arg
189        210                 215                 220
192 Arg Leu Val Gln Lys Gln Arg Ile Tyr Ser His Val Tyr Asp Met Leu
193 225                 230                 235                    240
196 Lys Cys Phe Gln Gly Ala Phe Asn Phe Ser Ile Leu Ala Val Leu Leu
197                245                 250                 255
200 Thr Ile Asn Ile Arg Ile Ala Val Asp Cys Tyr Phe Met Tyr Tyr Ser
201                260                 265                 270
204 Ile Tyr Asn Asn Val Ile Asn Asn Asp Tyr Tyr Leu Ile Val Pro Ala
205            275                 280                 285
208 Leu Leu Glu Ile Pro Ala Phe Ile Tyr Ala Ser Gln Ser Cys Met Val
209        290                 295                 300
212 Val Val Pro Arg Ile Ala His Gln Leu His Asn Ile Val Thr Asp Ser
213 305                 310                 315                    320
216 Gly Cys Cys Ser Cys Pro Asp Leu Ser Leu Gln Ile Gln Asn Phe Ser
217                325                 330                 335
220 Leu Gln Leu Leu His Gln Pro Ile Arg Ile Asp Cys Leu Gly Leu Thr
221                340                 345                 350
224 Ile Leu Asp Cys Ser Leu Leu Thr Arg Met Ala Cys Ser Val Gly Thr
225            355                 360                 365
228 Tyr Met Ile Tyr Ser Ile Gln Phe Ile Pro Lys Phe Ser Asn Thr Tyr
229        370                 375                 380
232 Met
233 385
236 <210> SEQ ID NO: 3
237 <211> LENGTH: 381
238 <212> TYPE: PRT
239 <213> ORGANISM: Drosophila melanogaster
241 <400> SEQUENCE: 3
243 Met Gln Arg Thr His Leu Glu Phe Glu Phe Lys Asn Ala Pro Gln Glu
244 1            5                 10                  15
247 Pro Lys Arg Pro Phe Glu Phe Phe Met Tyr Phe Lys Phe Cys Leu Ile
248            20                 25                  30
251 Asn Leu Met Met Met Ile Gln Val Cys Gly Ile Phe Ala Gln Tyr Gly
252        35                 40                  45
255 Glu Val Gly Lys Gly Ser Val Ser Gln Val Arg Val His Phe Ala Ile
256        50                 55                  60
259 Tyr Ala Phe Val Leu Trp Asn Tyr Thr Glu Asn Met Ala Asp Tyr Cys
260 65                 70                  75                    80
263 Tyr Phe Ile Asn Gly Ser Val Leu Lys Tyr Tyr Arg Gln Phe Asn Leu
264                85                 90                  95
267 Gln Leu Gly Ser Leu Arg Asp Glu Met Asp Gly Leu Arg Pro Gly Gly
```

RAW SEQUENCE LISTING   DATE: 03/11/2002
PATENT APPLICATION: US/10/081,816   TIME: 10:41:10

Input Set : A:\EP.txt
Output Set: N:\CRF3\03112002\J081816.raw

```
268              100              105              110
271 Met Leu Leu His His Cys Cys Glu Leu Ser Asp Arg Leu Glu Glu Leu
272         115              120              125
275 Arg Arg Arg Cys Arg Glu Ile His Asp Leu Gln Arg Glu Ser Phe Arg
276     130              135              140
279 Met His Gln Phe Gln Leu Ile Gly Leu Met Leu Ser Thr Leu Ile Asn
280 145              150              155              160
283 Asn Leu Thr Asn Phe Tyr Thr Leu Phe His Met Leu Ala Lys Gln Ser
284             165              170              175
287 Leu Glu Glu Val Ser Tyr Pro Val Val Val Gly Ser Val Tyr Ala Thr
288             180              185              190
291 Gly Phe Tyr Ile Asp Thr Tyr Ile Val Ala Leu Ile Asn Glu His Ile
292         195              200              205
295 Lys Leu Glu Leu Glu Ala Val Ala Leu Thr Met Arg Arg Phe Ala Glu
296     210              215              220
299 Pro Arg Glu Met Asp Glu Arg Leu Thr Arg Glu Val Arg Asn Lys Ile
300 225              230              235              240
303 Phe Ser Phe Leu Ala Thr Thr Leu Glu Ile Met Ile Gln Ile Trp Leu
304             245              250              255
307 Ser Phe Phe Ala Asn Phe Asp Asp Val Thr Pro Tyr Arg Lys Cys Glu
308             260              265              270
311 Asn Arg Pro Lys Asn Leu Phe Phe Lys Ile Arg Gln Lys Val Ile Gly
312         275              280              285
315 Ile Val Ser Ser Gly Lys Leu Lys Leu Leu Val Ser Leu Arg Phe Phe
316     290              295              300
319 Ile Ile Asp Asn Arg Leu Ile Leu Asn Leu His Lys Tyr Leu Ala Ile
320 305              310              315              320
323 Lys Leu Asn Phe Leu Asn Leu Ile Gln Ile Glu His Leu Ser Leu Glu
324             325              330              335
327 Leu Leu Asn Tyr Gln Pro Pro Met Leu Cys Gly Leu Leu His Leu Asp
328         340              345              350
331 Arg Arg Leu Val Tyr Leu Ile Ala Val Thr Ala Phe Ser Tyr Phe Ile
332         355              360              365
335 Thr Leu Val Gln Phe Asp Leu Tyr Leu Arg Lys Lys Ser
336     370              375              380
339 <210> SEQ ID NO: 4
340 <211> LENGTH: 373
341 <212> TYPE: PRT
342 <213> ORGANISM: Drosophila melanogaster
344 <400> SEQUENCE: 4
346 Met Arg Val Gly Lys Leu Cys Arg Leu Ala Leu Arg Phe Trp Met Gly
347 1           5               10              15
350 Leu Ile Leu Val Leu Gly Phe Ser Ser His Tyr Tyr Asn Pro Thr Arg
351         20              25              30
354 Arg Arg Leu Val Tyr Ser Arg Ile Leu Gln Thr Tyr Asp Trp Leu Leu
355         35              40              45
358 Met Val Ile Asn Leu Gly Ala Phe Tyr Leu Tyr Tyr Arg Tyr Ala Met
359     50              55              60
362 Thr Tyr Phe Leu Glu Gly Met Phe Arg Arg Gln Gly Phe Val Asn Gln
```

```
363 65                    70                75                   80
366 Val Ser Thr Cys Asn Val Phe Gln Gln Leu Leu Met Ala Val Thr Gly
367              85                90                   95
370 Thr Trp Leu His Phe Leu Phe Glu Arg His Val Cys Gln Thr Tyr Asn
371              100               105                  110
374 Glu Leu Ser Arg Ile Leu Lys His Asp Leu Lys Leu Lys Glu His Ser
375          115               120                  125
378 Arg Phe Tyr Cys Leu Ala Phe Leu Ala Lys Val Tyr Asn Phe Phe His
379      130               135               140
382 Asn Phe Asn Phe Ala Leu Ser Ala Ile Met His Trp Gly Leu Arg Pro
383 145               150               155                  160
386 Phe Asn Val Trp Asp Leu Leu Ala Asn Leu Tyr Phe Val Tyr Asn Ser
387              165               170               175
390 Leu Ala Arg Asp Ala Ile Leu Val Ala Tyr Val Leu Leu Leu Leu Asn
391          180               185               190
394 Leu Ser Glu Ala Leu Arg Leu Asn Gly Gln Gln Glu His Asp Thr Tyr
395          195               200               205
398 Ser Asp Leu Met Lys Gln Leu Arg Arg Arg Glu Arg Leu Leu Arg Ile
399· 210               215               220
402 Gly Arg Arg Val His Arg Met Phe Ala Trp Leu Val Ala Ile Ala Leu
403 225               230               235                  240
406 Ile Tyr Leu Val Phe Phe Asn Thr Ala Thr Ile Tyr Leu Gly Tyr Thr
407              245               250               255
410 Met Phe Ile Gln Lys His Asp Ala Leu Gly Leu Arg Gly Arg Gly Leu
411              260               265               270
414 Lys Met Leu Leu Thr Val Val Ser Phe Leu Val Ile Leu Trp Asp Val
415      ·275               280               285
418 Val Leu Leu Gln Val Ile Cys Glu Lys Leu Leu Ala Glu Glu Asn Lys
419      290               295               300
422 Ile Cys Asp Cys Pro Glu Asp Val Ala Ser Ser Arg Thr Thr Tyr Arg
423 305        ·         310               315                  320 ·
426 Gln Trp Glu Met Ser Ala Leu Arg Arg Ala Ile Thr Arg Ser Ser Pro
427              ·325               330                  335
430 Glu Asn Asn Val Leu Gly Met Phe Arg Met Asp Met Arg Cys Ala Phe
431              340               345               350
434 Ala Leu Ile Ser Cys Ser Leu Ser Tyr Gly Ile Ile Ile Ile Gln Ile
435          355               360               365
438 Gly Tyr Ile Pro Gly
439      370
442 <210> SEQ ID NO: 5
443 <211> LENGTH: 431
444 <212> TYPE: PRT
445 <213> ORGANISM: Drosophila melanogaster
447 <400> SEQUENCE: 5
449 Met Ala Phe Lys Leu Trp Glu Arg Phe Ser Gln Ala Asp Asn Val Phe
450 1              5                10                   15
453 Gln Ala Leu Arg Pro Leu Thr Phe Ile Ser Leu Leu Gly Leu Ala Pro
454          20                25                   30
457 Phe Arg Leu Asn Leu Asn Pro Arg Lys Glu Val Gln Thr Ser Lys Phe
```

Use of n and / or Xaa has been detected in the Sequence Listing. Review the Sequence Listing to ensure a corresponding explanation is present in the <220> to <223> fields of each sequence using n or Xaa.

VERIFICATION SUMMARY   DATE: 03/11/2002
PATENT APPLICATION: **US/10/081,816**   TIME: 10:41:11

Input Set : **A:\EP.txt**
Output Set: **N:\CRF3\03112002\J081816.raw**

L:11 M:270 C: Current Application Number differs, Replaced Current Application No
L:11 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:6177 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:60
L:6181 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:60